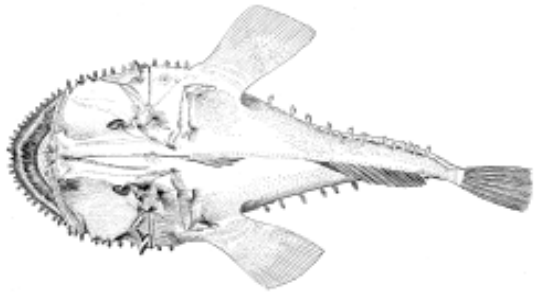

Last Revised: September 2000

Summary Status

Landings and Abundance Trends

Landings Data

PDF version

Goosefish

by
Anne Richards

Goosefish, also called monkfish or angler, *Lophius americanus*, range from the Grand Banks and northern Gulf of St. Lawrence south to Cape Hatteras, North Carolina. Individuals may be found from inshore areas to depths greater then 800 m (435 fathoms). Greatest concentrations occur between 70 and 100 m (38-55 fathoms), and in deeper water at about 190 m (100 fathoms). Seasonal migrations occur and appear to be related to spawning and food availability.

The goosefish has been described as mostly mouth with a tail attached, and reports of goosefish eating prey almost as big as themselves are common. Growth is fairly rapid and similar for both sexes up to age 4 and lengths of 47 to 48 cm (19 in.). After this, females grow a bit more rapidly and seem to live longer, to about 12 years, reaching a size of slightly longer than 100 cm (39 in.). Males have not been found older than age 9, with few older than age 6. Males reach total lengths of approximately 90 cm (35 in.).

Sexual maturity occurs between ages 3 and 4. Spawning may take place from spring through early autumn (depending on latitude). Females lay a nonadhesive, buoyant mucoid egg raft or veil, which can be as large as 12 m (39 ft) long and 1.5 m (5 ft) wide. Incubation ranges from 7 to 22 days, after which larvae and juveniles spend several months in a pelagic phase before settling to a benthic existence at a size of about 8 cm (3 in.).

Data to definitively distinguish separate stock units of goosefish are unavailable. Assessment information is currently summarized for the "Northern Region" (Gulf of Maine and northern Georges Bank) and the "Southern Region" (southern Georges Bank and Middle Atlantic) based on significant differences in recruitment patterns. The species came under management in federal waters in January 2000 through the Monkfish Fishery Management Plan, developed by the New England and Mid-Atlantic Fishery Management Councils. Regulatory measures vary with type of permit and include limited access, limitations on days at sea, mesh size restrictions, trips limits, minimum size limits and other measures.

USA commercial landings (live weight) remained at low levels until the mid-1970s, increasing from a few hundred mt annually to around 6,000 mt in 1978. Landings began to increase in the

northern region in the mid-1970s and in the southern region in the late 1970s. Landings remained stable at between 8,000 and 10,000 mt until the late 1980s and then increased steadily to a peak of 28, 300 mt in 1997. Landings averaged 27,000 mt during 1995-1998 and were 25,100 mt in 1999. There is no recreational fishery.

Total landings patterns are driven primarily by landings of goosefish tails. From 1964-1972, the only recorded parts were tails (unclassified). Much of the catch was unreported until the mid-1970s. From 1964-1975, reported landings of tails rose from 20 mt to 600 mt (landed weight). Landings of tails increased to 2,300 mt by 1980 and to 7,000 mt in 1997 and 6,500 mt in 1998. On a regional basis, most tails were landed from the northern region in the 1960s (75-90%) through to the late 1970s (74% in 1978). From 1979 to 1989, landings of tails were about equal from each region. During the 1990s, landings from the southern region have predominated.

Several market categories were added to the system in 1982. Tails were divided into large (> 2.0 lb), small (0.5-2.0 lb), and unclassified categories. At the same time, a market developed for livers. In 1989, unclassified round fish were added and in 1991, peewee tails (< 0.5 lb) and cheeks appeared. Finally, in 1992, belly flaps were also recorded.

The increase in landings of livers is especially notable, increasing steadily from 10 mt in 1982 to over 600 mt in 1997 and 1998. During that time, ex-vessel prices for livers rose from an average of $0.97/lb to more than $5.00/lb, with seasonal variations as high as $19.00/lb. Landings of pewee tails increased from 40 mt in 1991 to nearly 400 mt in 1995, and since declined to100 mt in 1998. The landings of peewee tails are significant because at < 0.5 lb per tail, each mt represents more than 4,400 fish, most of which are smaller than median length at maturity.

Landings (live weight) from Canadian waters (NAFO Subdiv. 5Zc) are only available from 1986 onward, but show a rise from about 300 mt in 1986 to 1,600 mt in 1990, followed by a decline to around 400-500 mt during 1992-1995. Canadian landings have remained at around 200 mt since 1996.

The NEFSC autumn bottom trawl survey biomass index has declined sharply in both management regions over the last 15 years. The average catch per tow during 1997-1999 was 0.8 kg (northern region) and 0.5 kg (southern region), compared to 2.5 kg (northern region) and 1.8 kg (southern region) per tow during 1965-1981. Survey indices have been at or near record lows since the late 1980s and the average and maximum sizes of goosefish caught in the survey have decreased steadily. For both regions, fishing mortality in recent years appears to have exceeded the overfishing definition level, while survey index values fall below levels at which the resource is considered to be overfished.

For further information

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NEFSC [Northeast Fisheries Science Center]. 1997. [Report of the] 23rd Northeast Regional Stock Assessment Workshop (23rd SAW) Stock Assessment Review Committee (SARC) consensus summary of assessments. Northeast. Fish. Sci. Cent. Ref. Doc. 97-05. 191 p.

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Summary Status - Northern Region

Long-term potential catch (MSY)	=	Unknown
Biomass corresponding to MSY	=	B_{MSY} proxy = 2.496 kg/tow [1]
Minimum biomass threshold (proxy)	=	1.460 kg/tow [2]
Stock biomass in 1997-99	=	0.823 kg/tow [3] (Implies stock is overfished)
F_{MSY}	=	Unknown
F_{TARGET}	=	Undefined
Overfishing definition	=	$F_{THRESHOLD} = F_{1970-79}$
F_{1999}	=	Unknown [4]
Age at 50% maturity	=	3 years, males
		4 years, females
Size at 50% maturity	=	37 cm (14.6 in.), males
		49 cm (19.3 in.), females
Assessment level	=	Index
Management	=	Joint NEFMC-MAFMC Monkfish FMP

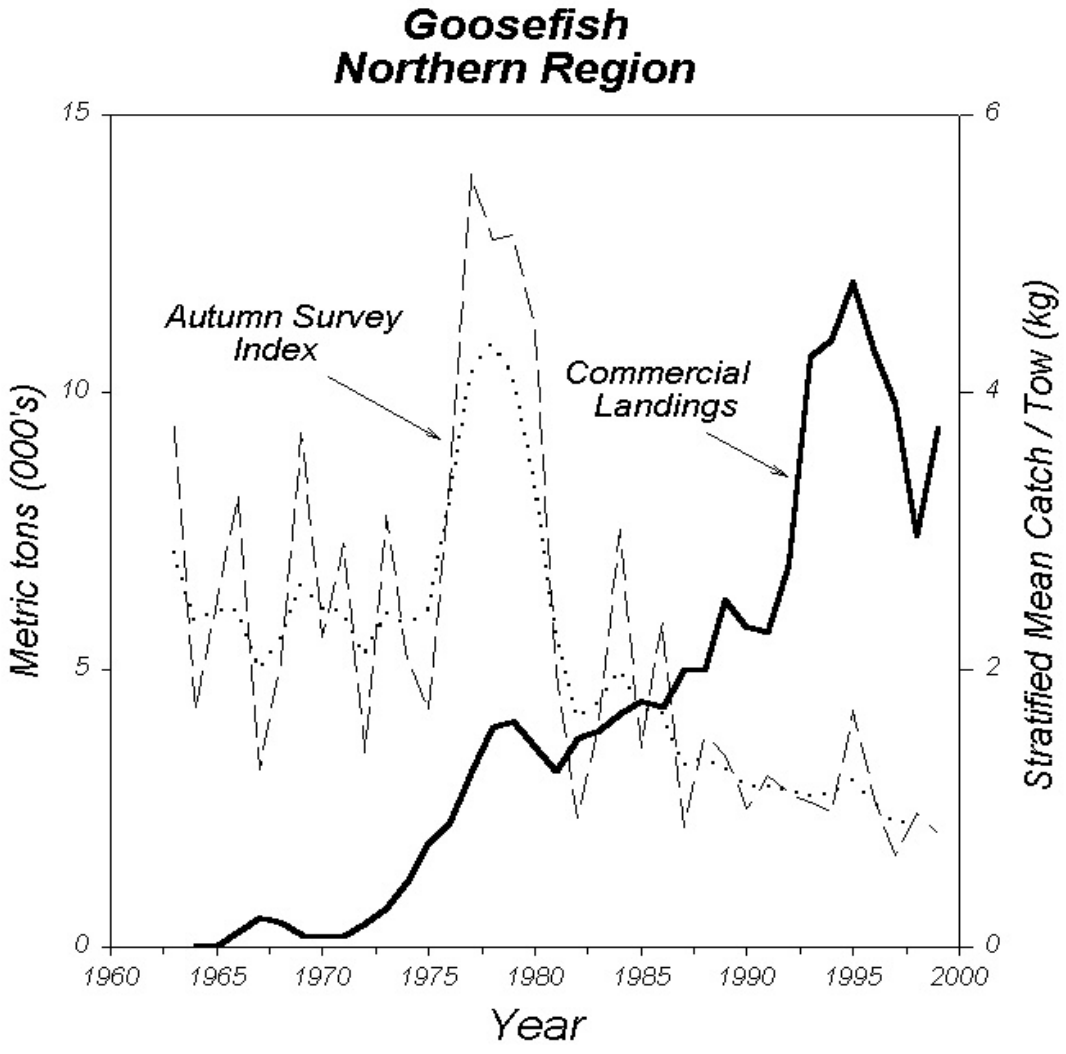
M = 0.2 **$F_{0.1}$ = Unknown** **F_{max} = Unknown**

[1] Median of the 1965-1981 3-year moving average NEFSC autumn R/V survey catch per tow

[2] The 33rd percentile of the 1963-1994 3-year moving average NEFSC autumn R/V survey catch per tow

[3] Current 3-year moving average catch per tow

[4] In the most recent assessment (SARC-31), F could not be estimated reliably; but trends in Z indicate that overfishing is occurring.


Goosefish
Northern Region
Autumn Survey Index
Commercial Landings
Metric tons (000's)
Stratified Mean Catch / Tow (kg)
Year
15
10
5
0
6
4
2
0
1960
1965
1970
1975
1980
1985
1990
1995
2000

Summary Status - Southern Region

Long-term potential catch (MSY)	=	Unknown
Biomass corresponding to MSY	=	B_{MSY} proxy = 1.848 kg/tow [1]
Minimum biomass threshold (proxy)	=	0.750 kg/tow [2]
Stock biomass in 1997-99	=	0.465 kg/tow [3] (Implies stock is overfished)
F_{MSY}	=	Unknown
F_{TARGET}	=	$F_{0.1}$
Overfishing definition	=	$F_{THRESHOLD} = F_{1970\text{-}79}$
F_{1999}	=	Unknown [4]
Age at 50% maturity	=	3 years, males
		4 years, females
Size at 50% maturity	=	37 cm (14.6 in.), males
		49 cm (19.3 in.), females
Assessment level	=	Index
Management	=	Joint NEFMC-MAFMC Monkfish FMP

M = 0.2 **$F_{0.1}$ = Unknown** **F_{max} = Unknown**

[1] Median of the 1965-1981 3-year moving average NEFSC autumn R/V survey catch per tow (revised target value of 1.846 kg/tow proposed by SARC 31).

[2] The 33rd percentile of the 1963-1994 3-year moving average NEFSC autumn R/V survey catch per tow (revised threshold value of 0.704 kg/tow proposed by SARC-31).

[3] Current 3-year moving average catch per tow

[4] In the most recent assessment (SARC-31), F could not be estimated reliably; but trends in Z indicate that overfishing is occurring.

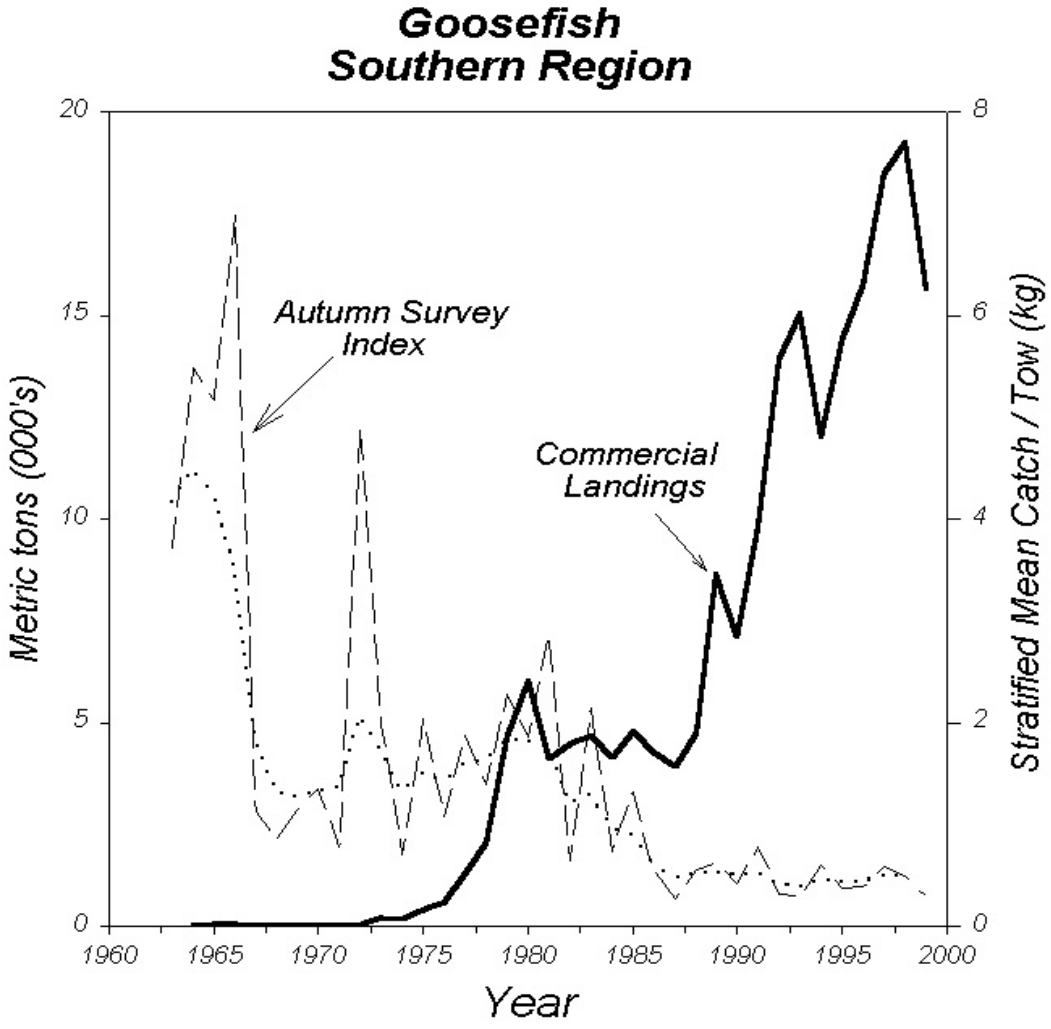

Goosefish
Southern Region
Autumn Survey Index
Commercial Landings
Metric tons (000's)
Stratified Mean Catch / Tow (kg)
Year
0
5
10
15
20
0
2
4
6
8
1960
1965
1970
1975
1980
1985
1990
1995
2000

Table 13.1 Recreational and commercial landings (thousand metric tons)

	Year										
Category	**1980-89 average**	**1990**	**1991**	**1992**	**1993**	**1994**	**1995**	**1996**	**1997**	**1998**	**1999**
U.S. recreational	-	-	-	-	-	-	-	-	-	-	-
Commercial											
United States											
Northern	4.4	5.8	5.7	6.9	10.6	11.0	12.0	10.8	9.8	7.4	9.4
Southern	5.0	7.1	9.8	13.9	15.1	12.0	14.4	15.8	18.5	19.3	15.7
Canada	0.8[1]	1.6	1.0	0.5	0.4	0.5	0.4	0.2	0.2	0.2	0.2
Other	-	-	-	-	-	-	-	-	-	-	-
Total nominal catch	10.2	14.5	16.5	21.3	26.1	23.5	26.8	26.8	28.5	26.9	25.3

[1] 1986-89 average, landings prior to 1986 not available